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Building & Highway Material Testing Laboratory

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NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.18/KRIDL/WMM/Gradation/2015-16

21.08.2015

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Hebbal Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (East),** KRIDL, Bangalore.

Name of Work : Providing asphalting to main and cross roads of Lottegollahalli in Ward No.18, BBMP, Bangalore.

Reference : AEE(Hebbal)/PR/333/2015-16 Dated: 19.08.2015

Date of Testing : 21.08.2015

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **7970**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	190	190	2.4	97.6	95-100
22.4	2850	3040	38.1	61.9	60-80
11.2	1565	4605	57.8	42.2	40-60
4.75	1200	5805	72.8	27.2	25-40
2.36	950	6755	84.8	15.2	15-30
0.600	615	7370	92.5	7.5	8-22
0.075	450	7820	98.1	1.9	0-8

Note:

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Job No.: CTCE/BBMP/W.No.18/KRIDL/WMM/AIV/2015-16

21.08.2015

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Hebbal Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (East),** KRIDL, Bangalore.
Name of the Work	Providing asphalting to main and cross roads of Lottegollahalli in Ward No.18, BBMP, Bangalore.
Reference	AEE(Hebbal)/PR/333/2015-16 Dated: 19.08.2015
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	21.08.2015

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	385	386	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	85	86	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	300	300	
4	Aggregate Impact value = percent fines	22.08	22.28	
	100* (W_2/W_1)%			22.18

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Basaveshwaranagar,
Bangalore-560079.

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.

Tele Fax : 23223227, Website : www.civiltechconsultants.com

E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/W.No.18/KRIDLWMM/S-T/2015-16 21.08.2015

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Hebbal Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (East),** KRIDL, Bangalore.
Name of Work	Providing asphalting to main and cross roads of Lottegollahalli in Ward No.18, BBMP, Bangalore.
Reference	AEE(Hebbal)/PR/333/2015-16 Dated: 19.08.2015
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	21.08.2015

Result : Flakiness Index = **12.39%**

Elongation Index = **13.95%**

Result : Combined Flakiness & Elongation index **26.34%**

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.18/KRIDL/BM/Bitumen/2015-16 29.08.2015

BITUMEN CONTENT DETERMINATION OF BITUMINOUS MACADAM MIX

As per IS2386 and IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** Hebbal Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (East),** KRIDL, Bangalore.
NAME OF THE WORK	Providing asphalting to main and cross roads of Lottegollahalli in Ward No.18, BBMP, Bangalore.
REFERENCE	AEE(Hebbal)/PR/333/2015-16 Dated: 19.08.2015
SAMPLE I/D	Roads in Lottegollahalli, Ward No.18, BBMP, Bangalore.
DATE OF TESTING	29.08.2015

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	482.5	481.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	17.5	18.50
7. Bitumen content in %	3.50	3.70
8. Average	3.60	

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Job No.: CTCE/BBMP/W.No.18/KRIDL/BM/Bitumen/2015-16 29.08.2015

GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX

As per IS2386 and IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** Hebbal Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (East),** KRIDL, Bangalore.
NAME OF THE WORK	Providing asphalting to main and cross roads of Lottegollahalli in Ward No.18, BBMP, Bangalore.
REFERENCE	AEE(Hebbal)/PR/333/2015-16 Dated: 19.08.2015
SAMPLE I/D	Roads in Lottegollahalli, Ward No.18, BBMP, Bangalore.
DATE OF TESTING	29.08.2015

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	36.25	7.51	7.51	92.49	90-100
13.2	90.56	18.77	26.28	73.72	56-88
4.75	260.4	53.97	80.25	19.75	16-36
2.36	44.95	9.32	89.57	10.43	4-19
0.3	22.32	4.63	94.19	5.81	2-10
0.075	10.21	2.12	96.31	3.69	0-8

Þ The results indicated above are based on the tests carried	Trail 2				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	35.26	7.32	7.32	92.68	90-100
13.2	80.65	16.75	24.07	75.93	56-88
4.75	265.4	55.12	79.19	20.81	16-36
2.36	49.65	10.31	89.50	10.50	4-19
0.3	25.35	5.26	94.77	5.23	2-10
0.075	11.22	2.33	97.10	2.90	0-8

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Basaveshwaranagar,
Bangalore-79.

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Tele Fax : 23223227, Website : www.civiltechconsultants.com

E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/W.No.18/KRIDL/SDBC/Bit/2015-16 31.08.2015

BITUMEN CONTENT DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

AS per IRC:SP:-1984

CLIENT	**Asst. Executive Engineer,** Hebbal Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (East),** KRIDL, Bangalore.
NAME OF THE WORK	Providing asphalting to main and cross roads of Lottegollahalli in Ward No.18, BBMP, Bangalore.
REFERENCE	AEE(Hebbal)/PR/333/2015-16 Dated: 19.08.2015
SAMPLE I/D	Roads in Lottegollahalli, Ward No.18, BBMP, Bangalore.
DATE OF TESTING	31.08.2015

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	476.5	473.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	23.5	26.50
7. Bitumen content in %	4.70	5.30
8. Average	**5.00**	

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Job No.: CTCE/BBMP/W.No.18/KRIDL/SDBC/Bit/2015-16 31.08.2015

BITUMEN CONTENT GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

As per IS2386 and IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** Hebbal Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (East),** KRIDL, Bangalore.
NAME OF THE WORK	Providing asphalting to main and cross roads of Lottegollahalli in Ward No.18, BBMP, Bangalore.
REFERENCE	AEE(Hebbal)/PR/333/2015-16 Dated: 19.08.2015
SAMPLE I/D	Roads in Lottegollahalli, Ward No.18, BBMP, Bangalore.
DATE OF TESTING	31.08.2015

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	29.65	6.22	6.22	93.78	90-100
4.75	263.5	55.30	61.52	38.48	35-51
2.36	52.36	10.99	72.51	27.49	24-39
1.18	38.54	8.09	80.60	19.40	15-30
0.3	39.66	8.32	88.92	11.08	9-19
0.075	38.52	8.08	97.01	2.99	3-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	33.32	7.04	7.04	92.96	90-100
4.75	263.5	55.65	62.69	37.31	35-51
2.36	31.25	6.60	69.29	30.71	24-39
1.18	36.25	7.66	76.94	23.06	15-30
0.3	36.25	7.66	84.60	15.40	9-19
0.075	55.65	11.75	96.35	3.65	3-8

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Basaveshwaranagar,
Bangalore-560079.

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.

Tele Fax : 23223227, Website : www.civiltechconsultants.com

E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com